

## WEST Search History

DATE: Monday, June 16, 2003

Set Name Query  
side by sideHit Count Set Name  
result set*DB=USPT,PGPB,JPAB,EPAB,DWPI,TDBD; PLUR=YES; OP=ADJ*

L6	L5 and collect\$5 tube	21	L6
L5	L1 and ((spin with filter with column) or (spin with column) or (filter with column))	246	L5
L4	L3 and collect\$5 tube	7	L4
L3	L2 and nucleic acid	50	L3
L2	L1 and spin column	53	L2

*DB=USPT; PLUR=YES; OP=ADJ*

L1	((422/69  422/70  422/100  422/101  422/102 )!.CCLS.  (536/25.4  536/124  536/127 )!.CCLS. )	7151	L1
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END OF SEARCH HISTORY

Help from Jan Lutton  
with class/subclass search

**WEST**

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**Search Results - Record(s) 1 through 2 of 2 returned.**☒ 1. Document ID: US 3917458 A

L2: Entry 1 of 2

File: USPT

Nov 4, 1975

DOCUMENT-IDENTIFIER: US 3917458 A

TITLE: Gas filtration system employing a filtration screen of particulate solids

Detailed Description Text (6):

The main, fluidized filter 20 forms the principal component of the gas filtration system of the present invention and in the embodiment is essentially annular in form. Further reference may be had to FIGS. 2-4 inclusive for a better understanding of the structure of fluidized filter 20 of the present invention and the operation of the same. Filter 20 is constructed of circular shaped parts which can be expanded lengthwise to filter increasingly large gas flow by the simple expedient of adding louvers sets in terms of the axial array and extend the body which is telescopic, which carries the same. In this way, the main fluidized filter is capable of handling any gas volumes (the minimum 4,000 c.f.m. size being expandable up to 15,000 c.f.m. in the illustrated embodiment). Turning to FIG. 3, the fluidized filter 20 is formed of a series of stacked annular louver sets 52 consisting of an annular outlet louver 42 which inclines downwardly and inwardly and a smaller diameter inlet louver 44 which inclines downwardly and outwardly to define a small annular gap 46 therebetween. The intake and outlet louvers 42 and 44 respectively are inclined at 45.degree. relative to the axis of the set. Preferably, three circumferentially spaced V-shaped carriers 48 are welded, along respective sides, to the individual frusto-conical louvers and, in turn, the upper edge of each carrier carries a modified V-shaped recess 50 which, in fact, receives in nested fashion, the converging ends of the louvers 42 and 44 of the next succeeding louver set. In addition to the annular opening 46 between the louver blades 42 and 44, there are provided circular openings 54 at the center of each set defined by the inner rim of each of the intake louvers 44. The louver sets therefore are piled on top of each other in a spaced, vertically extending array, FIG. 2, to form an essentially cylindrical particulate filter media screen or column, the gas intake being to the inside of the column and the gas outlet to the outside. The fluidized screen is defined by the particulate matter 56 which is captured between the louvers of the cylindrical array, or column. Essentially, therefore, each main fluidized filter 20 comprises the annular filter column 58, the inlet gas distribution assembly 60, is concentrically positioned internally of the fluidized filter screen 58, while the gas outlet disperser or assembly 62 concentrically surrounds filter screen 58. The inlet gas distribution assembly 60 comprises a plurality of concentric tubes 66, 68 and 70 which are telescopic such that the upper ends of the tubes are at the same level. They lie essentially just below the termination of pipe 36, within inlet tubing or pipe 64 which is of the same size as pipe 36 and essentially acts as a continuation of the same. In that respect, a coupling sleeve 72 concentrically surrounds the abutting pipes 36 and 64 and overlap both to form an essentially sealed joint permitting some axial shifting of the inlet tubing 64 with respect to pipe 36 emanating from the coarse filter 18. Pipes 66, 68 and 70 are of decreasing lengths and increasing diameters in that order, and leave spaces between each other, so that certain portions of the total gas flow pass relatively between these pipes. The pipes cooperate with circular baffle plates 74, 76 and 78 along with the lip 80 of inlet tubing 64 and imperforate circular plate 86, to divert the gas 90.degree. to the direction of entry, into the vertical array or column of louver sets and through the annular fluidized screen 58 defined by the particulate matter 56

captured between the louvers. Particulate matter 56 defining the filter media comprises, preferably, chrome ore of 125 to 1500 microns in size. As the filter expands to accommodate an increase in gas volume, the number of the distributor tubes may be increased, or the distance between baffles 74, 76 and 78 extended to insure continued uniform distribution of the gas to the fluidized filter media or particulate matter 56.

Detailed Description Text (7):

Associated with the inlet gas distribution assembly 60, is the media tank indicated generally at 90. Tank 90 is formed by an inner cylindrical tube 92 which is welded to the top intake louver 44 or otherwise attached. The tank is further defined by an outer cylindrical tube 94 and a frusto-conical annular member 96 whose upper edge is essentially of the same diameter as outer tube 94 while its inner, bottom edge corresponds generally to the inner rim of the uppermost discharge or outlet louver 40. These parts are welded to the top exhaust or outlet louver 42 to form a sturdy unit capable of withstanding the weight of the filtration material 56 stored therein for further distribution through the annular space 46 defined by the opposed edges of the opposite directed intake and exhaust louvers 44 and 42 respectively. Preferably, four vertical, circumferentially spaced partitions 98 are carried by the media tank 90 to insure equal flow of filtration media in the form of particulate matter 56 all around the cylindrical filter 20 and to form a uniform screen 58. An annular lid 100 covers the top of the media tank with a downwardly turned rim 102 at the outside overlying the upper edge of tube 94, while upturned rim 104 at the inner edge surrounds the inlet tubing 64. Interspersed in concentric fashion between the intake gas distributor assembly 60 and the fluidized filter column or screen 58 is an inner wire mesh sleeve or cylinder 106 extending the full axial length of the screen 58 and an immediately adjacent, slightly larger diameter glass mat sleeve 108 constituting non-woven glass fibers and being approximately two inches in thickness. Similarly, adjacent to the outside of the exhaust louvers 42, there is provided a second glass mat sleeve 110 which is concentrically disposed about the outside of the louver column and in contact therewith and surrounding the same is a second wire mesh cylinder or sleeve 112. The glass mat sleeves and the meshed cylinders cooperate on both the intake and exhaust sides of the louver column to prevent the fluidized media 56 from leaving the filter column except by discharge at the bottom of the column after saturation by the solid particles carried by the gas and performing the particle removing filtration function. Further, glass mat sleeves filter out any particles 100 microns or more in size which, for some reason, fail to separate at the coarse filter 18.

Detailed Description Text (8):

In similar fashion to the intake gas distributor assembly 60, the outlet gas disperser assembly 62 comprises a plurality of drums or tubes of various size. Concentric drums 114, 116 and 118 of increasing length and increasing diameter, in that order, act in conjunction with baffle rings or plates 120, 122 and 124 respectively, which extend radially inwardly from said drums or tubes and are essentially coplanar with the circular baffle plates or rings 78, 76 and 74 respectively, associated with the intake gas distributor 60 to control gas flow at the discharge side of the filter. The tube or drum diameters act in conjunction with their length as to insure equalized gas flows to the collection or gas outlet, 142 at the bottom of the fluidized filter 20. The inner edges of the rings 120, 122 and 124 contact the wire mesh cylinder 112 and the rings act in conjunction with drums 114, 116 and 118 to define the flow path along the upper and lower body shells 126 and 128 which are relatively slidable in telescopic form to permit extension and/or retraction of the fluidized filter dependent upon the number of annular filter sets 52 required to adequately remove the particulate matter carried by the gas stream entering pipe 36 in the direction of arrows 130. The upper body shell 126 has a rim 132 on the top that tightly fits around the outer tube 94 of media tank 90, allowing this portion of the filter to be opened by simply lifting the upper body shell 126 relative to the lower body shell 128. The lower shell in turn has its upper part fitting tightly but slidable therewith.

Detailed Description Text (20):

Regardless of the rectangular or circular configuration of the parts making up the illustrated systems, which are essentially formed of sheet metal, the fluidized filtration system may be manufactured or assembled in terms of the square footing of

filter screen area to meet the load specifications on a job by job basis. Since the units are either telescopic in form or constructed of modular sections added by end to end coupling, the present invention has application to an infinitesimal variety of commercial, industrial and housing needs. Further, because of the particular care in insuring uniform inlet gas distribution and controlled outlet gas collection, in conjunction with the inclination of the louver sets in certain embodiments, high gas velocities may be tolerated, even where the particulate matter forming the filtration zone is relatively small in size and light in weight without blow off of the particulate filter material from the discharge louvers.

## CLAIMS:

2. The gas filtration system as claimed in claim 1, wherein said discharge duct constitutes a pair of telescopic cylindrical shells, whereby additional louver sets may be accommodated by extending one shell relative to the other.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

K/MC

☒ 2. Document ID: SU 488597 A

L2: Entry 2 of 2

File: DWPI

Feb 4, 1976

DERWENT-ACC-NO: 1976-66251X

DERWENT-WEEK: 197635

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TITLE: Filtering column for classification of liquid - employing telescopically mounted shells of truncated cone shape to support elastic filtering discs

## Basic Abstract Text (1):

Improved structural reliability of the filtering column for clarifying liquids and diluted suspensions, e.g. for clarifying water in the industrial or field water supply, is ensured. The support of the pack of elastic porous filtering discs is composed of telescopically mounted shells having the shape of truncated cones fixed to washer plates separating the filtering discs. The telescopic support is moved by hydraulic ram.

## Standard Title Terms (1):

FILTER COLUMN CLASSIFY LIQUID

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

K/MC

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Term	Documents
TELESCOPIC.DWPI,TDBD,EPAB,JPAB,USPT,PGPB.	73389
(1 AND TELESCOPIC).USPT,PGPB,JPAB,EPAB,DWPI,TDBD.	2
(L1 AND TELESCOPIC).USPT,PGPB,JPAB,EPAB,DWPI,TDBD.	2

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## Search Results - Record(s) 1 through 2 of 2 returned.

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(L1 AND TELESCOPIC).USPT,PGPB,JPAB,EPAB,DWPI,TDBD.	2